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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,181

05/22/2006

Martin Hofmeister

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EXAMINER

STEVENS, BRIAN J

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,181	<b>Applicant(s)</b> HOFMEISTER ET AL.	
	<b>Examiner</b> Brian J. Stevens	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-10 and 12 is/are allowed.
- 6) ☒ Claim(s) 1 and 11 is/are rejected.
- 7) ☒ Claim(s) 2 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This communication is in response to Application No. 10/580,181 filed on May 22<sup>nd</sup>, 2006. This amendment presented on May 26<sup>th</sup>, 2009 which provides changes to claims 11 and 12 is hereby acknowledged. Claims 1-13 remain pending.

### ***Response to Arguments***

2. Applicant's arguments, see pages 10-12 of remarks, filed May 26<sup>th</sup>, 2009, with respect to claims 3, 11 and 12 have been fully considered and are persuasive. The 35 U.S.C. 112 rejection of claims 3, 11 and 12 has been withdrawn.

3. Applicant's arguments, see page 10 of remarks, filed May 26<sup>th</sup>, 2009, with respect to claims 11 and 12 have been fully considered and are persuasive. The objection of claims 11 and 12 has been withdrawn.

4. Applicant's arguments, see pages 14-16 of remarks, filed May 26<sup>th</sup>, 2009, with respect to claim 2 have been fully considered and are persuasive. The 35 U.S.C. 103 rejection of claim 2 has been withdrawn.

5. Applicant's arguments, see pages 18-19 of remarks, filed May 26<sup>th</sup>, 2009, with respect to claim 12 have been fully considered and are persuasive. The 35 U.S.C. 103 rejection of claim 12 has been withdrawn.

6. Applicant's arguments, see pages 19-20 of remarks, filed May 26<sup>th</sup>, 2009, with respect to claim 13 have been fully considered and are persuasive. The 35 U.S.C. 103 rejection of claim 13 has been withdrawn.

7. Regarding claim 1, as rejected under 35 U.S.C. 102(b) as being anticipated by US 5,689,808 by Sandahl et al, it is argued (Pages 12-14 of Remarks) that the applied reference does not teach claim limitations of claim 1, specifically *and a reference signal of a reference transmitter*.

7. In response to the above-mentioned argument, applicant's interpretation of the prior art has been considered but they are not persuasive. Sandahl teaches the knowledge of and a reference signal (See Claim 1, "a network control unit connected to the source of information to produce a signal containing data from the source of information and digital identifying information, both clocked from a high-stability local clock reference " and "a network monitoring unit for monitoring the phase difference between the timebase at the network interface units and a timebase at the network monitoring unit, wherein the timebase at the network monitoring unit is derived from phase locking the signal received from the network control unit with a local time base a the network monitoring unit") of a reference transmitter (See Figure 2, [26]). The receiver receives both a signal associated with a transmitted signal and a reference signal of a reference transmitter. The receiver (Figure 2, [76]) obtains any signals from [50], [52] and [54]) and also a reference signal from reference transmitter (See Figure 2, [26]) which is used by the NMU (Figure 2, [76]) to calculate the phase difference

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between the two timebases by using the reference signal obtained by the NCU (“a network monitoring unit for monitoring the phase difference between the timebase at the network interface units and a timebase at the network monitoring unit, wherein the timebase at the network monitoring unit is derived from phase locking the signal received from the network control unit with a local time base at the network monitoring unit”).

8. Regarding claim 11, as rejected under 35 U.S.C. 103() as being unpatentable over US 5,689,808 by Sandahl et al, in view of US 2002/0122210 A1 by Mitchell Illbery, it is argued (Pages 16-18 of Remarks) that the applied reference does not teach claim limitations of claim 11, specifically *determination of a transmission function and masking an impulse response for every transmitter from the summed impulse response.*

9. In response to the above-mentioned argument, applicant’s interpretation of the prior art has been considered but they are not persuasive. Sandahl together with Mitchell Illbery taught the knowledge of a unit for determining a transmission function (See Figure 1, [82]) of a transmission channel of several transmitters (See Figure 1, the sever transmitters being [50], [52] and [54]). The claim limitation does not state what type of “function” is being performed. The unit of the NMU performs a "function" in regards to the transmission of the several transmitters. The term “transmission function” is not well known in the art and is taken in its broadest most term and the claim limitations do not further what type of function the unit is performing or outputting. Secondly, one of ordinary skill in the art would be motivated to add an inverse Fourier

transform unit to a signal processing system if the design choice would need the transmission signal in the time-domain representation from the frequency domain.

In response to the above-mentioned argument, applicant's interpretation of the prior art has been considered but they are not persuasive. Sandahl together with Mitchell Illbery taught the knowledge of a unit for masking an impulse response (See Paragraph [0289]). As agreed upon by the applicant, the prior art of Mitchell Illbery taught the knowledge of masking certain types of impulse response functions. The reference of Mitchell Illbery is used to merely show the knowledge of masking the functions of a signal, and the reference of Sandahl has already been shown to take signals from different transmitters. Therefore, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Allowable Subject Matter***

**10.** Claims 3-10 and 12 are allowed.

**11.** Claims 2 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Claim Rejections - 35 USC § 102***

**12.** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**13.** Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by US 5,689,808 by Sandahl et al.

**14.** Regarding claim 1, Sandahl teaches A method for monitoring stability of a carrier frequency of identical transmitted signals of several transmitters of a single-frequency network by comprising:

receiving, by a receiver device (See Figure 1, [76]) positioned within the transmission range of the single frequency network (See Column 3, Lines 20-48, “Each of the plurality of transmitters is connected to the network unit to receive the signal from the network control unit which is simulcast via a radio broadcast containing the signal at a frequency controlled by the timing information” and “The receiver is located to receive the simulcast radio broadcasts”, thus the same single frequency and within range to receive the signal), a signal associated with a transmitted signal of a transmitter (See Column 3, Lines 20-48, “The receiver is located to receive the simulcast radio broadcasts”) and a reference signal (See Claim 1, “a network control unit connected to the source of information to produce a signal containing data from the source of information and digital identifying information, both clocked from a high-stability local clock reference “ and “a network monitoring unit for monitoring the phase difference

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between the timebase at the network interface units and a timebase at the network monitoring unit, wherein the timebase at the network monitoring unit is derived from phase locking the signal received from the network control unit with a local time base at the network monitoring unit") of a reference transmitter (See Figure 2, [26]); and

evaluating a phase position of the received signal associated with a the transmitted signal of the transmitter with reference to the received signal of the reference transmitter (See Column 4, Lines 6-14, "sending an adjustment signal to the network controller unit in response to the detection of the phase difference between the timebase at the network monitoring unit and the timebase at the transmitter being monitored").

### ***Claim Rejections - 35 USC § 103***

**15.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**16.** Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,689,808 by Sandahl et al., in view of US 2002/0122210 A1 by Mitchell Illbery.

**17.** Regarding claim 11, Sandahl teaches a device for monitoring the stability of the carrier frequency of identical transmitted signals of several transmitters of a single-frequency network comprising:

a receiver device (See Figure 1, [76]),



a unit for determining a transmission function (See Figure 1, [82]) of a transmission channel of several transmitters (See Figure 1, the sever transmitters being [50], [52] and [54]) of the single-frequency network to the receiver device disposed within the transmission range of the single-frequency network (See Column 3, Lines 20-48, “The receiver is located to receive the simulcast radio broadcasts”), but does not teach

a unit for implementing an inverse Fourier transform, and a unit for masking a impulse response for every transmitter from the summated impulse response.

Sandahl further teaches a unit for determining the phase characteristic of the impulse response for every transmitter (See Figure 1, [82], also see Column 4, Lines 6-14, “sending an adjustment signal to the network controller unit in response to the detection of the phase difference between the timebase at the network monitoring unit and the timebase at the transmitter being monitored”, thus the phase characteristics must be found first before finding the difference),

a unit for calculating the phase-displacement difference (See Figure 1, [82]) of the phase displacement of a transmitter relative to a reference transmitter at least at two different times and the carrier-frequency displacement of every transmitter relative to the carrier frequency of the reference transmitter (See Column 4, Lines 6-14, “sending an adjustment signal to the network controller unit in response to the detection of the phase difference between the timebase at the network monitoring unit and the timebase at the transmitter being monitored”, where the adjustment signal is used to correct for

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the found "phase-displacement difference" of the received signals and the reference signal), but does not teach

a unit for presenting the calculated carrier-frequency (See Figure 1, [32], [34] and [36]) displacement of every transmitter relative to the carrier frequency of the reference transmitter of the single-frequency network (See Column 9, 54-61, "Using the phase-locked modulation Timebase as the reference for the radio transmitter synthesizer assures precise frequency control", where the NIUs use the signal to correct for the carrier-frequency displacement to each transmitters which was fed back via Line [88] in Figure 1), is well known in the art.

Mitchell Illbery teaches the knowledge of having a unit for performing a inverse Fourier transform (See Paragraph [0391]) and further teaches a unit for masking an impulse response (See Paragraph [0289]), is well known in the art.

**18.** It would have been obvious to one of ordinary skill in the art having the teachings of Sandahl and Mitchell Illbery before them at the time the invention was made to modify the device of Sandahl to further include a unit for implementing an inverse Fourier transform, and a unit for masking a impulse response for every transmitter from the summated impulse response. In order to obtain and impulse response of the incoming signals, the IFFT would need to be performed, secondly by masking the impulse response would remove the unnecessary portions from being used by the rest of the units for optimization. One or ordinary skill in the art would therefore have been motivated to make the modification to further include a unit for implementing an inverse

Fourier transform, and a unit for masking a impulse response for every transmitter from the summated impulse response.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Stevens whose telephone number is (571)270-3623. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BS/

/Brian Stevens/

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611